What is claimed is:

1.   A network authentication apparatus comprising:

a network interface unit connected with a network and

5   transmitting/receiving a packet;

a packet relay unit for relaying a received packet in
accordance with a destination address of the received packet;
and

a filtering processing unit for judging whether to relay

10   the received packet to the packet relay unit or discard the packet
in accordance with two or more of a destination MAC address,
destination IPv6 address, source MAC address, source IPv6 address
and source IPv6 interface ID contained in the received packet.

15   2. The network authentication apparatus as claimed in claim
1,

wherein the filtering processing unit judges whether to
relay the received packet to the packet relay unit or discard
the packet in accordance with at least the destination MAC

20   address ,and, source IPv6 address or source IPv6 interface ID.

3. The network authentication apparatus as claimed in claim
1,

wherein the filtering processing unit further comprises:

25   a filtering information storage unit for storing at least
a destination MAC address ,and, source MAC address or source IPv6
address or source IPv6 interface ID ,and, judgment information
representing relay or discard in association with each other;
and

30   a processing unit for comparing the destination MAC address

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and source MAC address or source IPv6 address or source IPv6 interface ID contained in the received packet with the destination MAC address and source MAC address or source IPv6 address or source IPv6 interface ID stored in the filtering information storage unit, and when the addresses match with each other, judging whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with each address.

4. The network authentication apparatus as claimed in claim 1,

wherein the filtering processing unit comprises:

a MAC filtering unit for judging whether to relay the received packet to the packet relay unit or discard the packet in accordance with the destination MAC address or source MAC address contained in the received packet; and

an IP filtering unit for judging whether to relay the received packet to the packet relay unit or discard the packet in accordance with the source IPv6 address or source IPv6 interface ID contained in the received packet.

5. The network authentication apparatus as claimed in claim 4,

wherein the filtering processing unit further comprises:

a filtering information storage unit for storing at least a destination MAC address , and, source MAC address or source IPv6 address or source IPv6 interface ID , and, judgment information representing relay or discard in association with each other.

6. The network authentication apparatus as claimed in claim

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4,

wherein the MAC filtering unit further comprises:

a MAC filtering information storage unit for storing a destination MAC address and source MAC address and judgment information representing relay or discard in association with each other; and

the IP filtering unit further comprises:

an IP filtering information storage unit for storing a destination MAC address ,and, source IPv6 address or source IPv6 interface ID ,and, judgment information representing relay or discard in association with each other.

7. The network authentication apparatus as claimed in claim 6,

wherein the MAC filtering unit compares the destination MAC address or source MAC address contained in the received packet with the destination MAC address or source MAC address stored in the MAC filtering information storage unit, and when the addresses match with each other, judging whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with the destination MAC address or source MAC address; and

the IP filtering unit compares the source IPv6 address or source IPv6 interface ID contained in the received packet with the source IPv6 address or source IPv6 interface ID stored in the IP filtering information storage unit, and when the addresses or interface IDs match with each other, judging whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with the source IPv6 address or source IPv6 interface ID.

8. The network authentication apparatus as claimed in claim 1, further comprising:

an authentication unit for receiving an authentication request from an arbitrary information terminal device connected to the network interface unit via a network and executing authentication on the basis of predetermined information related to the arbitrary information terminal device.

9. The network authentication apparatus as claimed in claim 8,

wherein the authentication unit has an authentication information storage unit for storing user ID, password , and, IPv6 interface ID or MAC address in associated with each other, and performs authentication by comparing user ID, password , and, IPv6 interface ID or MAC address received from the arbitrary information terminal device with the user ID, password , and, IPv6 interface ID or MAC address stored in the authentication information storage unit.

10. The network authentication apparatus as claimed in claim 1, further comprising:

a security control unit for generating or exchanging a key for packet encryption or decoding for each communication counterpart, using a key exchange protocol; and

a security processing unit for executing authentication of at least the received packet, using the key generated by the security control unit.

11. A network authentication system comprising:

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an authentication server for receiving an authentication request from an arbitrary information terminal device connected via a network and executing authentication on the basis of predetermined information related to the arbitrary information terminal device; and

5   terminal device; and

a network node device connected to the network and relaying a packet received from the network;

wherein the network node device having:

a network interface unit connected with the network and

10   transmitting/receiving a packet;

a packet relay unit for relaying a received packet in accordance with a destination address of the received packet; and

a filtering processing unit for judging whether to relay

15   the received packet to the packet relay unit or discard the packet in accordance with two or more of a destination MAC address, destination IPv6 address, source MAC address, source IPv6 address and source IPv6 interface ID contained in the received packet;

and wherein the filtering processing unit relays only a

20   packet addressed to the authentication server to the packet relay unit, of packets sent from an arbitrary information terminal device that is not authenticated by the authentication server.

12. The network authentication system as claimed in claim

25   11,

wherein the filtering processing unit of the network node device further comprises:

a filtering information storage unit for storing at least a destination MAC address , and, source MAC address or source IPv6

30   address or source IPv6 interface ID , and, judgment information

representing relay or discard in association with each other; and

a processing unit for comparing the destination MAC address ,and, source MAC address or source IPv6 address or source

5 IPv6 interface ID contained in the received packet with the destination MAC address ,and, source MAC address or source IPv6 address or source IPv6 interface ID stored in the filtering information storage unit, and when the addresses match with each other, judging whether to relay the received packet to the packet

10 relay unit or discard the packet in accordance with the judgment information associated with each address.

13. The network authentication system as claimed in claim 12,

15 wherein the authentication server includes an instruction issuing unit for instruction addition of information of the arbitrary information terminal device when the arbitrary information terminal device is authenticated;

the network node device includes a change unit for newly

20 registering the MAC address or IPv6 address or IPv6 interface ID of the arbitrary information terminal device as the source MAC address or the source IPv6 address or the source IPv6 interface ID into the filtering information storage unit together with the judgment information representing relay in accordance with an

25 instruction from the authentication server; and

the filtering processing unit relays a packet sent from the arbitrary information terminal device authenticated by the authentication server, to the packet relay unit.

30 14. The network authentication system as claimed in claim

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11,

wherein the filtering processing unit of the network node device further comprises:

a MAC filtering unit for judging whether to relay the received packet to the packet relay unit or discard the packet in accordance with the destination MAC address or source MAC address contained in the received packet; and

an IP filtering unit for judging whether to relay the received packet to the packet relay unit or discard the packet in accordance with the source IPv6 address or source IPv6 interface ID contained in the received packet.

15. The network authentication system as claimed in claim 14,

wherein the filtering processing unit of the network node device further comprises:

a filtering information storage unit for storing at least a destination MAC address, source MAC address, source IPv6 address or source IPv6 interface ID in association with judgment information representing relay or discard;

the MAC filtering unit compares the destination MAC address or source MAC address contained in the received packet with the destination MAC address or source MAC address stored in the filtering information storage unit, and when the addresses match with each other, judging whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with the destination MAC address or source MAC address, and

the IP filtering unit compares the source IPv6 address or source IPv6 interface ID contained in the received packet with

the source IPv6 address or source IPv6 interface ID stored in the filtering information storage unit, and when the addresses or interface IDs match with each other, judging whether to relay the received packet to the packet relay unit or discard the packet

5 in accordance with the judgment information associated with the source IPv6 address or source IPv6 interface ID.

16. A switch apparatus comprising:

plural network interface units connected with a network

10 and transmitting/receiving packets;

a packet switch unit for relaying a received packet between the plural network interface units in accordance with a destination address of the received packet; and

a filtering processing unit for judging whether to relay

15 a received packet to the packet switch unit or discard the packet in accordance with two or more of a destination MAC address, destination IPv6 address, source MAC address, source IPv6 address and source IPv6 interface ID contained in the received packet.